

IN THE SPECIFICATION:

Please insert the following new paragraph on page 1, prior to line 2:

--CROSS-REFERENCE TO RELATED APPLICATION

This is the U.S. National Stage of International Application No. PCT/IB2003/004246 filed September 29, 2003 and published in English on April 7, 2005 under International Publication No. WO 2005/031755 A1.--

On page 2, please amend the paragraph beginning at line 10 as follows:

--This kind of receiver requires high-order analog baseband filters to attenuate undesired signals, and at the same time, it has a high in-band amplification. Depending on the involved system, ~~that is~~ e.g., GSM (global system for mobile communications), CDMA (code division multiple access), WCDMA (wideband CDMA), etc., up to seventh-order analog filters may be required. In addition to the complicated filter, also an accurate AGC is needed in order to relax ADC requirements in terms of sampling frequency, dynamic range and related silicon costs. To this end, a large number of high quality resistors and capacitors is needed in the implementation. Due to large temperature dependency and process variations of the resistor-capacitor (RC) time constants, often some kind of calibration or tuning is required in addition. Moreover, high quality resistors require additional mask layers, which also increase the costs of the production process.--

On page 3, please amend the paragraph beginning at line 5 as follows:

--A block diagram of a more digital implementation of a direct conversion receiver is presented as Figure 2.--

On page 5, please amend the paragraph beginning at line 1 as follows:

--The operational principle of a current mode sampling without frequency down-conversion is illustrated by the schematic circuit of Figure 3. The circuit comprises a

transconductance element (GM) 30, which is connected via a first switching element S31 and a second switching element S32 to an output. Between the first switching element S31 and the second switching element S32, a sampling capacitor C30 and a third switching element 33 are connected in parallel to each other to ground.--

On page 21, please amend the paragraph beginning at line 26 as follows:

--Preferred embodiments of the invention become apparent from the ~~dependent~~  
~~claims~~detailed description below.--

On page 28, please amend the paragraph beginning at line 17 and ending at page 29, line 2 as follows:

--Capacitors C2a and C2b are referred to as shared switched capacitors, since in a conventional circuit topology, additional separate sampling capacitors are employed, which are usually connected to the output of the operational amplifier, like capacitors C4a and C4b in figure 9. Because such separate sampling capacitors are omitted in the ~~presented~~inventive circuit, the capacitive load of the operational amplifier 103 is reduced. This results in a lower power consumption compared to a conventional active current mode sampling, like the active current mode sampling in the circuit of figure 9. Since the total number of the components in the sampling circuitry is moreover smaller than in a conventional circuit, the total thermal noise contribution of the sampling capacitors ( $kT/C$ ) is also reduced.--

On page 29, please amend the paragraph beginning at line 19 and ending at page 30, line 2 as follows:

--In the circuit of figure 10, the operational amplifier related errors see a gain close to unity, as the source impedance formed by the transconductance element 100 and mixer 101 is relatively high compared to the impedances that define the gain. On the other hand, the signal gain can be set independently from the noise gain with the product of the voltage gain of an LNA (not shown) arranged before the transconductance element 100, the transconductance of the transconductance element 100 and the effective resistance of shared switched capacitor C2. Thus, some of the requirements on the operational amplifier 103 are relaxed. This enables a more costeffective implementation, as the error contribution of the operational amplifier is negligible in the ~~presented~~inventive sampling scheme.--

On page 33, please amend the paragraph beginning at line 4 as follows:

--A drawback of a gain control of figure 12 is that if a large attenuation is needed in the gain control circuit, the size of both, the continuous time capacitor C1 and the switched capacitor C2, will become very large.--